

## **REMARKS**

### ***Status of the Claims***

Claims 17, 20-23, 26-29, 31-37, and 40-43 are pending. Claim 17 is the only independent claim. In this Reply, claim 17 has been amended. Support for the amendment to claim 17 exists, *inter alia*, in claim 38 and at paragraph [0021] of the substitute specification. Claims 38 and 39 have been cancelled. No new matter has been added.

Applicants respectfully request the Examiner reconsider and withdraw the rejections in view of the foregoing amendments and the following remarks.

### ***Rejections Under 35 U.S.C. § 103***

The rejection of claims 17, 20-23, 26-29, 31-33, 35-37, and 39 under 35 U.S.C. § 103(a) over EP 1 138 794 ("Spanjers et al.") in view of U.S. Patent No. 5,620,652 ("Tack et al.") and Lyle et al., "Aluminum Alloys," Ullmann's Encyclopedia of Industrial Chemistry, 2000 ("Lyle et al.") is respectfully traversed. The presently claimed cast aluminum alloy is suitable for thermally highly stressed cast parts. Page 1, paragraph [0002]. It comprises at least magnesium (Mg), silicon (Si), scandium (Sc), titanium (Ti), gadolinium (Gd), and aluminum. In particular, the Mg content is 3.0-6.0 % by weight. The Si content is > 1.0 - 4.0 % by weight. The Sc content is 0.01 - < 0.5 % by weight. The Ti content is 0.05 - 0.15 % by weight. The Gd content is at least 0.001 % by weight. If manganese (Mn) is present, the cast aluminum alloy comprises maximally 0.15 % by weight Mn. The combination of Spanjers et al., Tack et al., and Lyle et al. does not disclose or suggest the presently claimed cast aluminum alloy comprising maximally 0.15 % by weight Mn.

Spanjers et al. discloses an aluminium-magnesium casting alloy having the following composition in weight percent: 2.7-6.0 Mg; 0.4-1.4 Mn; 0.10-1.5 Zn; 0.3 max. Zr; 0.3 max. V; 0.3 max. Sc; 0.2 max. Ti; 1.0 max. Fe; and 1.4 max. Si. Page 3, paragraph [0012]. According to Spanjers et al., the level of Mn must be 0.4-1.4 weight percent. Mn levels below 0.4 % cannot provide sufficient strength

and corrosion resistance to the alloy. See paragraph [0021]. Thus, one of ordinary skill in the art would not have had a rational reason or a reasonable expectation of success in lowering the Mn level to maximally 0.15 % by weight Mn, as presently recited.

Tack et al. and Lyle et al. do not correct the deficiencies of Spanjers et al. Tack et al. is directed to wrought aluminum alloys, not cast aluminum alloys. See col. 14, line 40. Furthermore, Tack et al. is merely cited for the presently recited gadolinium content. See Office Action at page 4. Lyle et al. is merely cited for the presently recited Cr content of dependent claims 31 and 32. See Office Action at paragraph bridging pages 5-6.

Accordingly, the combination of Spanjers et al, Tack et al., and Lyle et al. does not render the presently claimed cast aluminum alloy obvious. Therefore, withdrawal of the obviousness rejection over Spanjers et al., Tack et al., and Lyle et al. is respectfully requested.

The rejection of claims 17, 20-23, 26-29, 31-34, and 36-39 under 35 U.S.C. § 103(a) over U.S. Patent No. 3,619,181 ("Willey") in view of Tack et al. is respectfully traversed. The combination of Willey and Tack et al. does not disclose or suggest the presently claimed cast aluminum alloy.

Willey is directed to wrought aluminum alloys. While Willey does not explicitly state that its aluminum alloys are wrought aluminum alloys, it is apparent to one of ordinary skill in the art that Willey is directed to wrought aluminum alloys. Willey provides aluminum alloys to which scandium may be added at col. 2, lines 50-56. Willey identifies each of these aluminum alloys with a four digit number. There are different identification systems for wrought aluminum alloys and cast aluminum alloys. Wrought aluminum alloys are identified by a four digit number. Thus, the alloys identified by Willey are wrought aluminum alloys. Furthermore, Willey refers to rolled alloys throughout. One of ordinary skill in the art understands that an alloy that has been subject to mechanical working such as rolling is a wrought aluminum alloy, not a cast aluminum alloy. Willey does not disclose or suggest

that its wrought aluminum alloy compositions would be successful for a cast aluminum alloy, as presently claimed.

Tack et al. does not correct the deficiencies of Willey. Tack et al. is also directed to wrought aluminum alloys. See col. 14, line 40. Furthermore, Tack et al. is merely cited for the presently recited gadolinium content. See Office Action at page 7.

Accordingly, the combination of Willey and Tack et al. does not render the presently claimed cast aluminum alloy obvious. Therefore, withdrawal of the obviousness rejection over Willey in view of Tack et al. is respectfully requested.

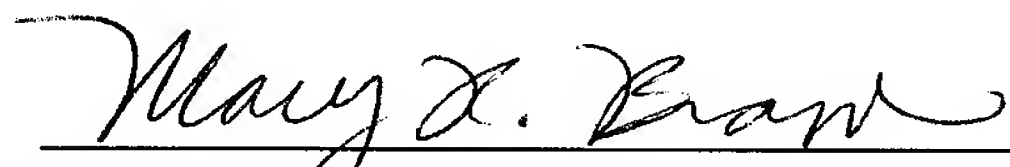
### *Conclusion*

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and favorable action thereon is earnestly solicited. If there are any questions relating to this Reply or the application in general, it would be appreciated if the Examiner could telephone the undersigned at (202) 624-2871 so that examination of this application may be expedited.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 056226.57663US).

Respectfully submitted,

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